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UNITED STATES DEPARTMENT OF AGRICULTURE
OFFICE OF PUBLIC ROADS AND RURAL ENGINEERING
WASHINGTON, D. C.

FIELD LETTER FOR JULY
August 1, 1916.

No. 18.

DIVISION OF CONSTRUCTION
Vernon M. Peirce, Chief.

Projects:

Advice and Inspection.

E. S. Alderman, J. H. E., in addition to his work of assisting the County Engineer of Palm Beach County in constructing about 40 miles of bituminous macadam, is constructing two experimental roads in Palm Beach County, Florida.

H. K. Craig, H. E., has completed a reconnaissance survey of a road from Little Switzerland to Woodlawn Valley, North Carolina, and has been assigned to make a survey of the road from Connelly's Springs in Burke County to the Catawba County line. He has also been assigned to investigate the damage done by the recent heavy rains to the road and bridges along the Central Highway through the mountain section of North Carolina.

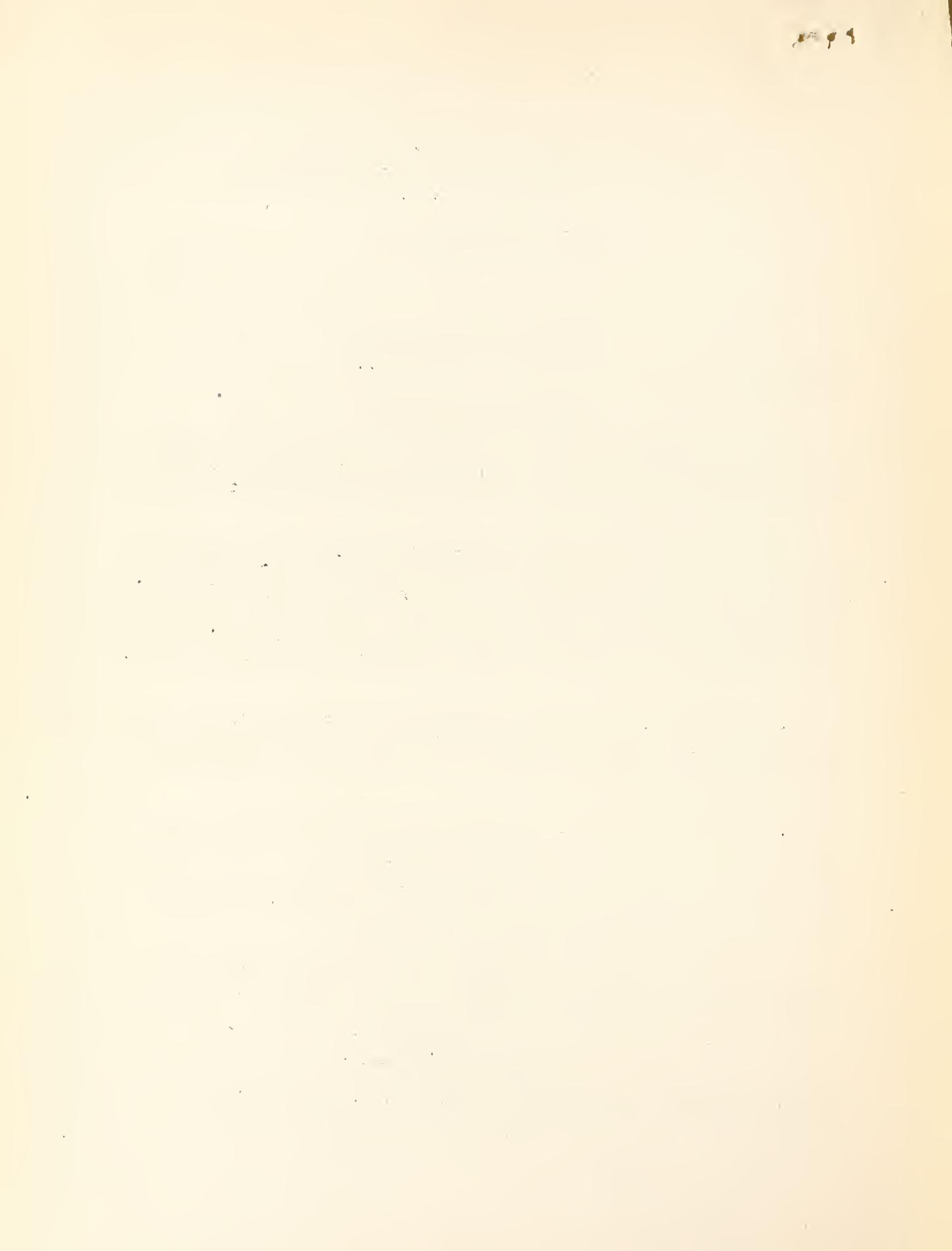
F. A. Davis, J. H. E., has completed his assignment in LeFlore and Pushmataha Counties, Oklahoma, and has been assigned to make an investigation and prepare a report for a county system for Pittsburgh County, Oklahoma.

H. H. Lotter, S. H. E., has been assigned to prepare a report on a system of roads for Holmes County, Mississippi, and to co-operate with the local authorities in planning for the construction of several miles of road to be built from the proceeds of recent bond issues. He has also been assigned to cooperate with the local officials of Madison County along similar lines.

M. E. Worrell, H. E., has been assigned to make a survey of and prepare plans for improving the road from Perryville to Linden, in Perry County, Tennessee.

Object-Lesson Roads.

J. H. Dodge, S. R. C., is at Lisbon, N. D., constructing object-lesson roads in the several commissioners' districts.



R. H. Harrison, J. H. E., has been assigned to cooperate with the County Engineer of Bryan and McCurtain Counties, Oklahoma, in constructing several miles of earth and sand-clay road.

Early in the month E. O. Hathaway, S. H. E., was assigned to assist Mr. E. A. Anderson in surface treating several miles of gravel road near Tuscaloosa, Alabama, but heavy rains prevented any work from being done, and on July 24, Mr. Hathaway was assigned to construct an object-lesson road at Statenville, Georgia.

J. C. Wonders, S. H. E., is at Osceola, Nebraska, constructing an earth object-lesson road.

County Systems.

Mack Galbreath, J. H. E., has completed about 20 miles of the 40-mile system of roads in Eastville District, Northampton County, Virginia.

B. H. Burrell, S. H. E., on July 8 completed an investigation of the conditions in Cass County, Missouri, and proceeded to Billings, Missouri, where he will complete his report of the county system for Cass County and assist the Engineer of Christian County in making surveys and plans for a number of roads which that county proposes to construct.

Post Roads.

Work on the Ohio Post Road is in progress. The concrete surfacing has been completed and the force is now at work on constructing headwalls for culverts and shaping shoulders. J. T. Pauls, J. H. E., is in charge of this work.

P. A. Rideout, J. H. E., reports that the post road in Old Fort Township, North Carolina, was very badly damaged by the recent heavy rains.

General.

In company with some of the officials of the Reno Commercial Club, W. H. Lynch, S. H. E., recently inspected the proposed route of the Lincoln Highway between Reno and Ely, Nevada.

J. W. Janssen, H. E., assisted by Messrs. A. S. Hathaway, J. H. E., and A. C. Dunn, J. H. E., has completed a survey of and plans for improving the unimproved sections of the Washington-Richmond Highway in Prince William County, Virginia.

F. R. Lyons, J. H. E., was granted a furlough beginning July 14 for a period of about 3 months, during which time he intends to attend the encampment at Plattsburg, New York.



DIVISION OF MAINTENANCE.

E. W. JAMES, Chief.

Projects:

Advice, Inspection and Lectures.

W. L. Spoon, S. H. E., delivered an address before the Rural Letter Carriers Association at Greensboro, N. C. on July 3.

D. H. Winslow, S. R. C., addressed a meeting of the Chamber of Commerce at New Bern, N. C., July 11, and on July 27 appeared before the Good Roads Association of Wake County at Raleigh. He also addressed a meeting at Boon Hill on the night of July 28 and one at Fayetteville, on July 31.

On July 22, Geo. C. Scales, S. H. E., inspected sections of the Columbia-Charleston road near Holly Hill, S. C., and reported on drainage conditions.

Washington-Atlanta Highway.

Clayton District, Johnston Co., N. C., renewed its application for supervision of maintenance on July 18 and allotted \$450 therefor.

A section of the Highway out of Raleigh, known as the Country Club Road, was recently reconstructed with a concrete base and mixed bituminous top at a cost of \$14,796.64.

The unusual storms and resulting high water in the Catawba and other rivers, caused considerable damage along the Highway between Rockingham, N. C., and Camden, S. C. Reports from Mr. Towles' section indicate that three or four bridges are out in the Pee Dee Valley north of Cheraw and that the Highway bridge at Camden (390 ft. span) is a total wreck. On Juniper River, south of Cheraw, the causeway at Ingams Mill went out, leaving a gap of 30 feet and two other bridges on Juniper were destroyed. The bridges at Black River and Lynches River, which were built under the direction of W. L. Spoon during 1915, suffered little or no damage. The entire Highway south of Fayetteville was badly washed at many points and from all indications it will be many months before the road is put back into its former excellent condition.

Central Highway.

The storm, mentioned above, did very little damage on the Central Highway, although the Catawba River bridge, which marked the western terminus of the road now under application, was destroyed.

On Mr. Winslow's section, the Neuse River has caused much inconvenience owing to the fact that one section of the Highway parallels the river at a low grade so that every slight rise closes the road to traffic.



Field Experiments.

Retreatment of section 3 of the Rockville Pike was finished on July 3; cost data will be supplied later.

Sections 7 and 2 of the Pike were also treated during July and Bradley Lane was nearly finished on July 31. Cost data of all these retreatments will be furnished at a later date.

Preparation is now being made to remove what remains of the original carpet coat on the concrete sections of North Kensington Road and to retreat them.

NATIONAL PARK AND FOREST ROADS
T. Warren Allen, Chief.

Projects:

National Forest Roads

District No. 2 - A. E. Palen in charge.

The Rabbit Ears Pass road in the Routt National Forest, Colorado, has been opened to travel but fairly heavy maintenance was necessary on account of the heavy snows. The annual excursion from Steamboat Springs to Denver was made over this road during the first of July.

Survey on the Ruedi-Hopkins section of the Frying Pan Road, in the Sopris Forest, Colorado, was completed July 13, and the party transferred to Monarch Pass.

The Cochetopa Pass Road in the Cochetopa Forest, Colorado, is in excellent condition, and has not been affected by the long dry spell of the last two months.

District No. 3 - O. N. Powell in charge.

Roads: Construction was started on the Salt River-Pleasant Valley road but little progress has been made owing to delay in obtaining supplies and equipment. This road is 25 miles in length and we expect to build about half of it this season.

Bids were asked for the construction of the seven-mile section of the Winslow-Long Valley road but no bids were received. This construction will be undertaken by administration.

The Questa-Elizabethtown road will be completed by the end of July. The State of New Mexico has built two miles on the east side of the divide to connect up with the portion built by the Forest Service.



Work on the plans for the Tucson-Mt. Lemmon road was suspended during this month on account of pressure of construction work.

Plans for the Snowflake-Pinetop road have been completed.

District No. 4 - C. H. Kendall in charge.

In Kaibab National Forest, Arizona. Four men and two teams have been doing minor repairs and maintenance work over a section of approximately 20 miles.

In Idaho on Payette River Road, a little necessary maintenance work has been done and a crib rebuilt that was damaged during recent high water.

In Nevada maintenance work is in progress upon two roads in the Humboldt National Forest, and upon the Indian Creek-National Road in the Santa Rosa Forest.

In Utah, on the Ephraim-Orangeville road the construction crew in Emery County is making good progress with the heavy work in Straight Canyon, and a compressor outfit has been shipped in for use upon the rock work. In Sanpete County two camps are established, approximately twenty men and six teams to each, one paid from State funds, and one from local donation. Good progress is being made both within and outside the Forest.

On the Kamas-Stockmore Road in the Uinta National Forest, a force of twenty men and six teams are engaged on heavy dugway work and have completed about 2,000 feet of road and one timber bridge.

On the Modena-St. George Road in the Dixie National Forest, approximately 3,000 feet of new grade has been completed and the summit crossed. There now remains about 2,000 feet of heavy work, and two miles of easy grading to complete the season's work upon this project.

The cross-sectioning and final location of the Kamas-Stockmore Road will be completed by the end of the month, and the survey party will be detailed to the office for completing the maps. A survey party has been detailed to the La Sal Forest for the purpose of making a location survey of the La Sal-Paradox Road both within and outside the Forest.

The final location of the Ephraim-Orangeville Road within Sanpete County is nearly completed. In Emery County two routes will be thoroughly examined before final location is made down the east slope.



An examination of the Strawberry Valley survey (made last year to the Duchesne County line) has been made with a view to extending this survey to the County seat of Duchesne, a distance of 30 miles, and recommending the Project for Federal Aid.

Weather. Dry, hot weather with local showers has generally prevailed since the 20th of July.

District No. 5 - C. C. Morris in charge.

Trinity River Road: The working force on this job was increased on July 5 to 100 men, all of whom are subsisted at one camp. About $1\frac{1}{2}$ miles of road were completed during the month, one half of this being in extremely heavy rock section. The rock is a badly broken slate so that it can be moved quite easily. An Ingersoll-Rand air compressor arrived on the job on July 13.

Salmon River Road: The location survey of this project was completed to mile 4, the design to mile 2 and slope stakes to mile 1 at the end of June. During July the survey was continued to mile 6, the design to mile 3 and the slope stakes to mile 3. A construction force of 30 men and 3 teams was put at work on July 10.

A number of small projects were prosecuted in different parts of the state.

The field work incident to the preparation of road base maps for the Forester was practically complete at the end of the month.

District No. 6 - B. J. Finch in charge.

During the month of July the office work in District 6 has been on the compilation of back reports for the months January to May 1916, inclusive, and in the working up of plans and estimates for the Kittitas County section of the Blewett Pass Road in the Wenatchee National Forest. These plans are now completed and ready for approval by the Washington office. This is a continuation of the section of the same road for which plans were made during the past winter, and when constructed will complete the work to be done by the Forest Service on the south side of Blewett Pass.

One survey party has been at work during the month on the survey of the McKenzie River Road, that section lying in the Deschutes National Forest east of the Cascade Mountains. Very good progress has been made by this party and it is expected that the entire survey, about 13 miles in length, will be finished by the end of the month. A map and tentative estimate for this section of the road have been prepared for the county officials of Creek County for their use in making up a budget showing the amount to be raised by taxation during 1917. It is believed that the local road district will contribute



about \$4,000. for the construction of this section of the road.

Construction work is still being done on the Little White Salmon River Road in the Columbia National Forest. This road will be completed before the end of the month and turned over to the county for maintenance. The work has been on a four mile section of the road, which is eight miles in total length.

Work is also in progress on the Blewett Pass Road in the Wenatchee National Forest under the supervision of the Forest Service. Construction was begun at the summit and is being continued north toward Leavenworth. It is expected that the local road supervisor will soon begin at the north end of this five and one-half mile section and work south to meet the Forest Service work.

On the McKenzie River Road in the Cascade National Forest about the same force is being employed as last month. Considerable bad weather was experienced the first part of July, and it is expected that the progress from now on will be much more rapid.

County Work, Skamania County, Washington - J. T. Schuyler in charge.

On July 21, bids were opened for construction work on the Mill A Flat road, and contract awarded to Porter Bros. The bid was \$6,550 for 100 stations.

The County Commissioners have advertised for bids on the Mt. Pleasant Road. They have decided, against the advice of this Office, to build this road on the first survey made, which is on a 6.7 per cent grade.

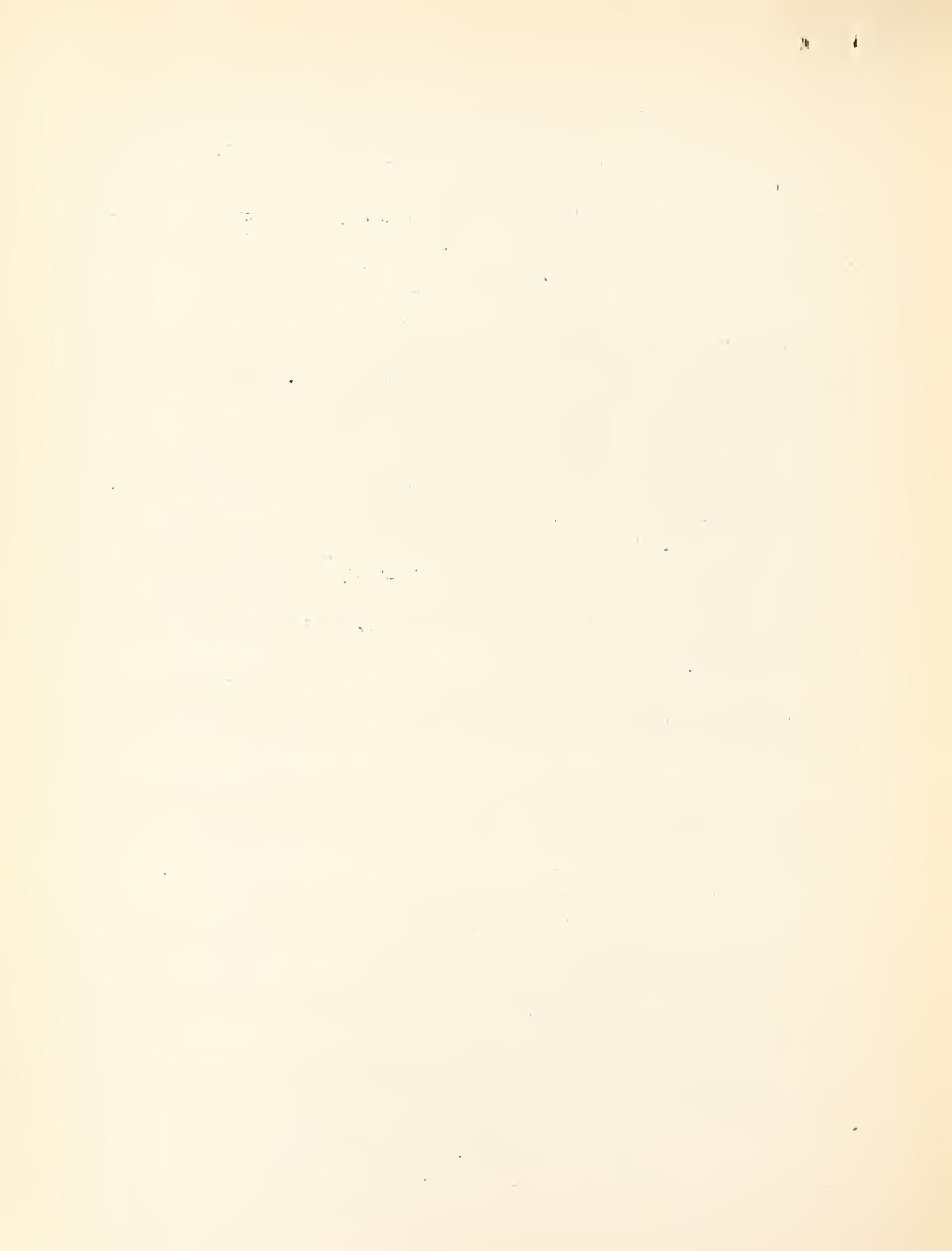
It is probable that work will be sufficiently advanced on the three main contracts in this county by August 31, to dispense with the services of the engineer from the Office of Public Roads & Rural Engineering.

Franklin County, Idaho work - T. C. Peterson in charge.

On the Preston-Mink Creek Road the base line has been run in and the cross-sectioning completed. (462 Stas.)

On the Preston-Banida road the field work has been completed from Sta. 104 to Sta. 260.

The work contemplated on these two roads consists principally in widening the road and eliminating some of the sharp curves.



Medford-Crater Lake Highway Survey - J. H. Ball in charge.

Good progress has been made on this survey and the field work will be completed past mile fifty by the end of the month. The transit line, profile and cross-sections are kept plotted and a temporary grade line is established as the survey progresses.

The average cost per mile for the first fifty miles of this survey has been approximately \$54.00, exclusive of expense to the Office of Public Roads and Rural Engineering.

DIVISION OF ROAD MATERIAL TESTS AND RESEARCH
Prevost Hubbard, Chief.

Projects:

Administration

J. M. Cobb and G. A. Watson have been added to the laboratory force as Student Assistants during the summer months.

Routine Tests and Analyses.

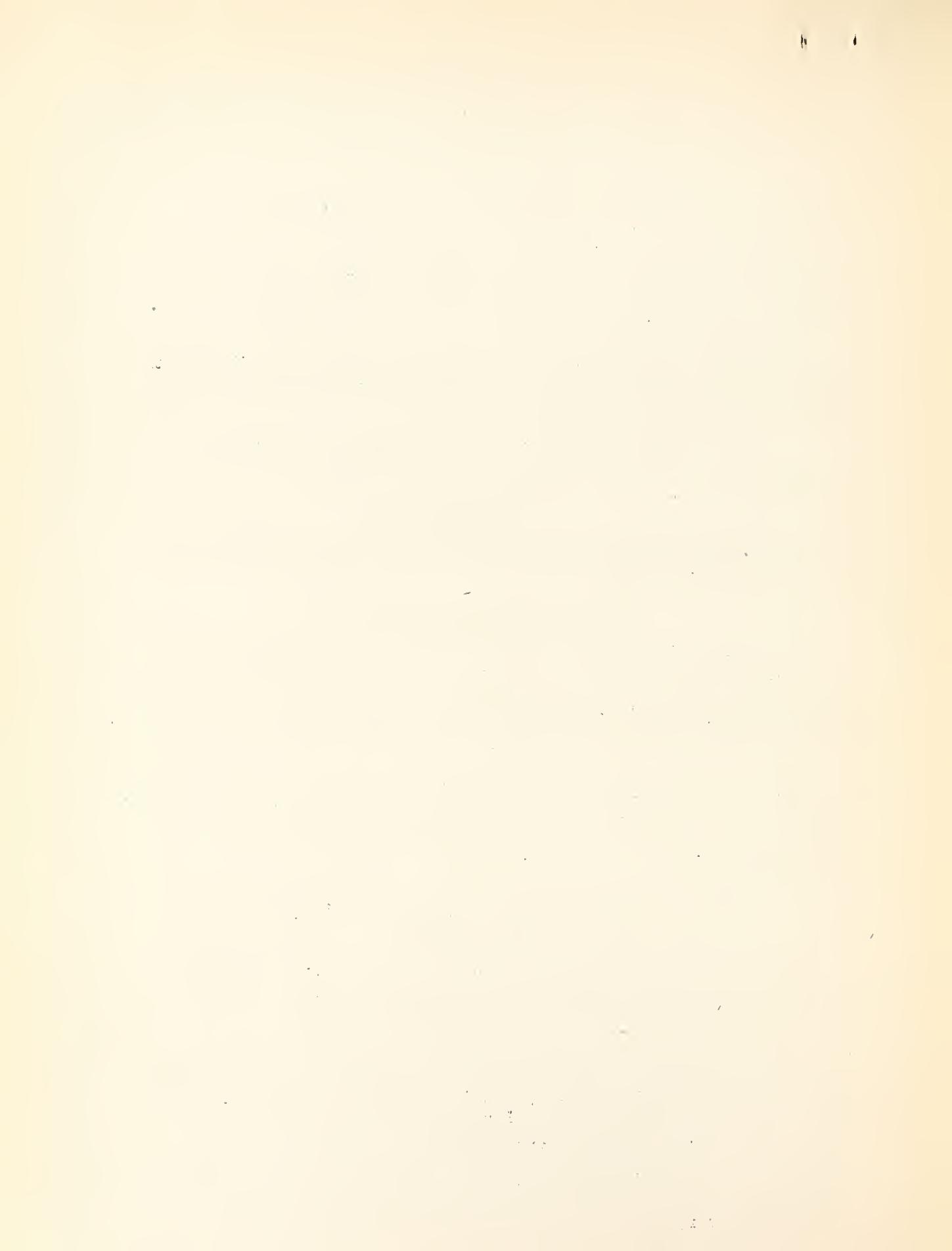
During July, 35 samples were examined in the Chemical Laboratory, of which, 23 were bituminous materials, 10 galvanized metal, and 2 water. 68 samples of rock, sand, gravel, etc., were examined in the Physical Laboratory and 59 samples were examined and classified in the Microscopic Laboratory.

As a record of the volume of routine work of the various laboratories for the fiscal year 1915-16 it is of interest to note that 1453 samples of road material were analyzed and tested. This represents an increase of nearly 40% over the number received during the preceding year.

Research upon the Properties of Dust Preventives and Road Binders.

The experimental refining plant at Arlington Farm has been practically completed and trial runs in the refining of Mexican petroleum will be made during the early part of August.

A simple apparatus for determining the viscosity of fluid bituminous materials has been devised as a result of investigations during the past two months, and it is expected that this apparatus will be shortly perfected. Investigation of the thickness of bituminous films on bituminous aggregates is being pushed and an investigation of the effect of water on the viscosity test for bituminous materials has been started. Work on the latter investigation was suggested through observation of the expansion, in the viscosimeter, of oils containing water when tested at 100° C., and



their subsequent rapid contraction in the graduated cylinder.

The work is also being continued on the ultra-microscopic determination of colloidal material in solutions of bitumen.

Nonbituminous Foad Material Investigations.

During the month a number of tests have been made, with a modification of the toughness machine upon test specimens of brick pavements, laid upon cushions of each sand and sand-cement grout. The joints in both cases are filled with cement grout. It has as yet been impossible to draw any definite conclusions, but it is planned to carry out an exhaustive series of tests along this line.

An investigation of gravel and sand clay for road building has led to the preparation of a tentative table of limitations of mechanical analysis, to be placed on the back of the gravel and sand clay report blanks. When completed this table will serve the same purpose as the one now in use upon the back of the report blanks for tests on rock.

Standardization of Methods of Testing.

A new Freas electric oven has been received in the Chemical Laboratory and will be shortly equipped for making volatilization tests in accordance with the recent recommendations of Committee D-4 of the American Society for Testing Materials. It is proposed to run an exhaustive series of comparative tests with the new standard method as compared with the one which has heretofore been used in the Office.

Experimental Bituminous Road Construction and Maintenance.

Mr. Anderton is still in Tuscaloosa, Ala., upon his assignment relative to the surface treatment of gravel roads with bituminous materials. Continued rain has prevented the application of oil from being made during July, but it is hoped that the treatment will be completed at an early date.

The section of experimental soil asphalt road at Arlington Farm is in excellent condition and it is planned to extend this experiment to certain roads in the vicinity of Washington.



Concrete Investigations.

A large slab 16 inches thick was tested during July at Arlington Farm and during the progress of the test this slab was cut into various widths in order to determine the influence of width on the effective width of the slab. The results of the tests have been worked into shape for presentation.

A bulletin upon the expansion and contraction of concrete roads, summarizing all of the results obtained both in the laboratory and in the field from 1910 to the present date is in course of preparation by Messrs. Goldbeck and Jackson and will be finished shortly.

Measurements are being continued and new specimens prepared for accumulating additional data on the flow of concrete.

Soil Pressure Investigations.

The building for the investigation of the distribution of loads through fills of various kinds is now almost complete and sufficient apparatus will soon be on hand to obtain test results in the near future.

DIVISION OF ROAD ECONOMICS
J. E. Pennybacker, Chief.

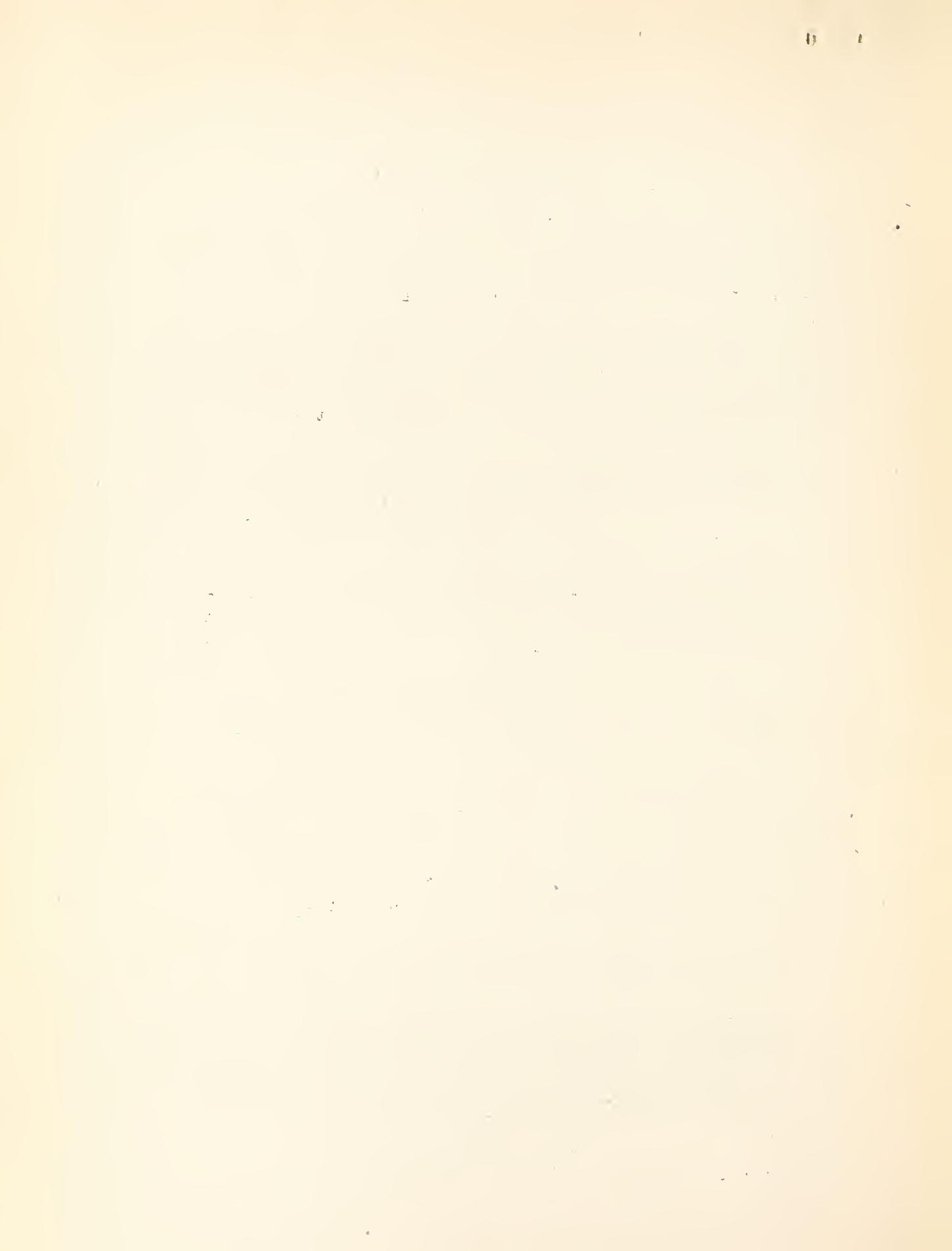
Projects:

Statistical Investigations

The bulletin on road mileage and revenues for the states of New Jersey, New York and Pennsylvania has passed the page proof stage, and should be ready for distribution in the very near future. The two bulletins on the Southern and New England States, respectively, are ready for publication. All of the Western States will be included in one bulletin, which will be ready for publication soon after the middle of August.

The data on Automobile Registrations, Licenses, and Revenues in the United States, 1915, was issued as Circular #59 on July 6.

The data for the circular on State Highway Mileage, Revenues and Expenditures, 1915, has been completed and is now in the hands of the printer. This circular when issued will be in the nature of a revision of Circular #52, issued during 1915 and entitled, "State Highway Mileage, Revenues and Expenditures to January 1, 1915."



Federal Aid

The apportionment of the federal aid appropriation to the several states on the basis of area, mileage of rural post roads, and population, as prescribed in the law, has been worked out and published in the form of Circular #62, of the Secretary's Office. It is also embodied in the certificate made by the Secretary of Agriculture to the Secretary of the Treasury, to the governors of the states, and to the state highway departments.

J. E. Pennybacker is assisting the committee in drafting the rules and regulations to govern the administration of the Federal Aid Law.

L. E. Boykin is preparing a digest of certain features of the road laws of the several states which it is desirable to have in that form for assistance in inaugurating the work under the Federal Aid Act.

Lectures and Road Models.

M. O. Eldridge delivered a lecture in connection with the Rural Pastors' Conference at Ovoca, near Tullahoma, Tennessee, on July 22.

J. D. Fauntleroy accompanied the West Michigan Pike Association on its sixth annual tour and made addresses at various places in Michigan July 10-13, inclusive, with regard to the promotion of road building in that State.

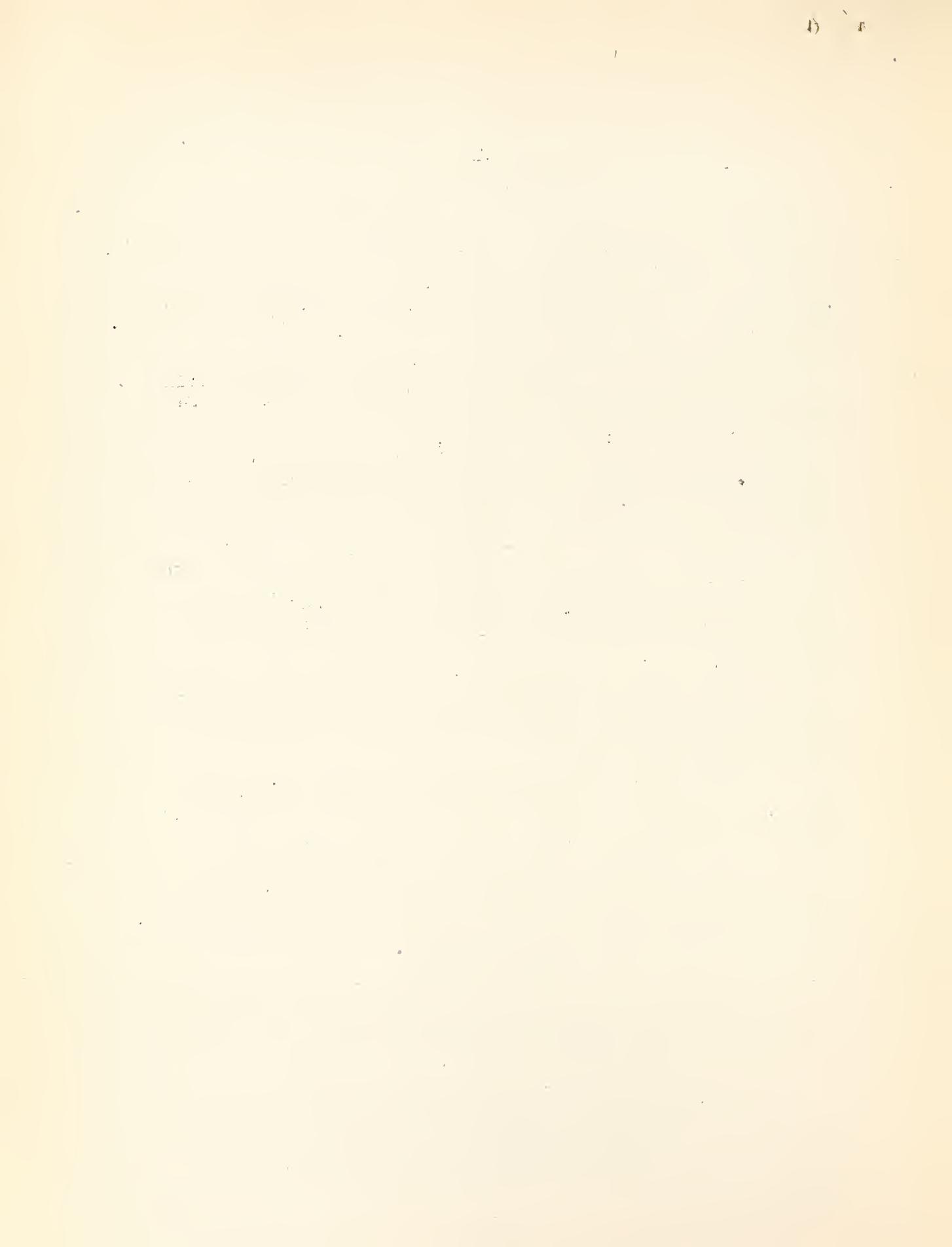
Dr. L. I. Hewes addressed the Farmers' Club at Purcellville, Virginia, July 22 on the subject of financing road improvements.

J. J. Tobin was assigned to Westerly, Rhode Island, to investigate conditions and confer with local road officials with a view to installing a system of cost keeping for that town. He prepared and submitted a report in connection with this assignment.

Convict Studies

H. S. Fairbank conferred during the month of July with Mr. Rodman Wiley, State Commissioner of Public Roads, of Kentucky, with a view to establishing a model convict camp in that State.

The model convict camp in Fulton County, Georgia, was not moved to the new location during the month owing to a change in the plans of the County Commissioners. It is now the intention to gutter and topsoil the Powers Ferry Road from the present location of the camp, and it will probably not be moved until some time in September.



State Highway Management Studies.

During the month of July, J. D. Fauntleroy conferred with the state highway departments of Illinois, Michigan, Ohio and Wisconsin with regard to the state highway management studies and the reports which have been prepared for those states. J. J. Tobin is assisting Mr. Fauntleroy in this work, and is engaged in checking the reports for the New England States.

Economic Post Road Studies

W. E. Rosengarten has returned to the Office after collecting data in connection with the post road studies in Iowa, Kentucky, North Carolina, Ohio, South Carolina and Tennessee, and is now writing reports on those studies.



DIVISION OF RURAL ENGINEERING
E. B. McCormick, Mechanical Engineer
Chief of Division.

Projects:

Domestic Water Supply and Sewage Disposal.

An article for the Yearbook on the subject of Sewage Disposal for the Farm has been completed by Geo. M. Warren, D. E. Work on the bulletin on Farm Water Systems is progressing.

Lines and grades have been staked for two small sewers at the Beltsville Farm; this is in addition to a 500 ft. sewer recently designed and staked and upon which work will soon be started.

Farm Structures.

The farmstead model is nearing completion and promises to be an exceptionally fine example of the model-maker's art as well as of great value in assisting farmers in planning the arrangement of their farmstead.

Drawings for a horse barn with accommodations for 13 head have been completed and are ready for distribution.

Drawings for a cottage to be erected by the Bureau of Animal Industry on a Government Project in Idaho have been completed.

Drawings for a seven room farmhouse which appears in miniature on the farmstead model have been completed.

Working drawings for the barn also shown on the model are being prepared.

Drawings and specifications are being prepared for installation of a ten ton traveling crane in one of the buildings on the Arlington Farm; the work involves raising the entire rod and the reinforcement of the walls with piers. When completed the building will be used by the Bureau of Chemistry for the manufacture of certain chemicals on a commercial scale.

The expiration of the temporary appointments of four draftsmen has reduced the force to such an extent that progress in the preparation of contemplated designs will be retarded.

Field Experiments.

Computations have been completed for the original and final tests with the 3" tires on the Texas Post Road and the results are being tabulated. Due to the small force at present engaged upon the work the tabulation of results is proceeding rather slowly.

Thresher Explosions.

Elmer Johnson is conducting demonstrations in the field of the fire extinguishing apparatus designed in the Division of Rural Engineering for use on threshing machines. The demonstrations are being made in cooperation with the States Relations Service in Oregon, Washington, and Idaho.



DIVISION OF DRAINAGE INVESTIGATIONS
S. H. McCrory, Chief.

Projects:

Supervision

S. H. McCrory, chief, visited some of the southeastern states on July 10 to 15. In Florida he visited the field work near Ft. Pierce, Vero, and Miami, with reference to the investigations of run-off and the subsidence of muck soil, in company with C. W. Okey, S. D. E. and F. E. Staebner, J. D. E. At Columbia, S. C., he conferred with Hon. E. J. Watson, State Commissioner of Agriculture, relative to drainage work, particularly in the coastal counties, and with Hon. D. C. Heyward, relative to Combahee Corporation Project. At Athens, Ga., he arranged with Prof. Fain of the State College of Agriculture, for the first work under the new cooperative agreement between this Office and the College.

J. V. Phillips, D. E., has been given official station at Athens, Ga., to have immediate charge of the work undertaken under the new cooperative agreement with the College.

Farm Drainage

S. M. Woodward, D. E., was in Washington and at Arlington, July 10 to 15, in consultation with D. L. Yarnell, D. E., relative to the investigations of flow in drain tile. The data now being secured in those experiments seem to indicate that the coefficient of roughness may be lower, in well laid drains, than has sometimes been supposed.

Additional farm surveys for tile drains have been made in West Virginia by F. F. Shafer, D. E. O. G. Baxter, D. E., has examined a large plantation near Shell Mound, Miss., and will make a drainage plan for the wet land.

Report Transmitted:

French Prairie Drainage District, Ore., by Guy A. Hart.

Reports Received:

Construction and Cost of Tile Drainage System on Page-Hart Farm, Jackson, Co., Ark., by O. G. Baxter.
Long Marsh Drainage Ditches, Caroline and Queen Anne Cos., Md., by F. F. Shafer.
Prevention of Erosion by Terracing, by C. E. Ramser.



Overflowed Lands.

The field investigations on the Kootenai River in Idaho have been completed. Data bearing upon the plan of reclamation for that project were collected from the Canadian Government offices at Victoria, B. C., by Lewis A. Jones, S. D. E.

The field work, including reconnaissance levels, and channel measurements, for the preliminary report on the Grand River valley in northern Missouri, has been completed, and the data are being compiled by W. N. Hall, D. E., in the Washington office.

Geo. R. Boyd, S. D. E. recently appointed, has begun a study of drainage conditions on the Saginaw River and tributaries, Michigan, with a view to recommending what improvements will be practicable for construction. He is assisted by O. C. Ayres, J.D.E.

Report Received:

Eighteen Mile Creek, So. Car., by F. G. Eason and S. W. Frescoln.

Swamp Lands.

For the purpose of further investigation the extent, location, and value of swamp lands, Lewis A. Jones, S. D. E., has begun a trip of inspection in Maine, New Hampshire, and Vermont, which may include others of the northeastern States.

Construction, Operation and Maintenance.

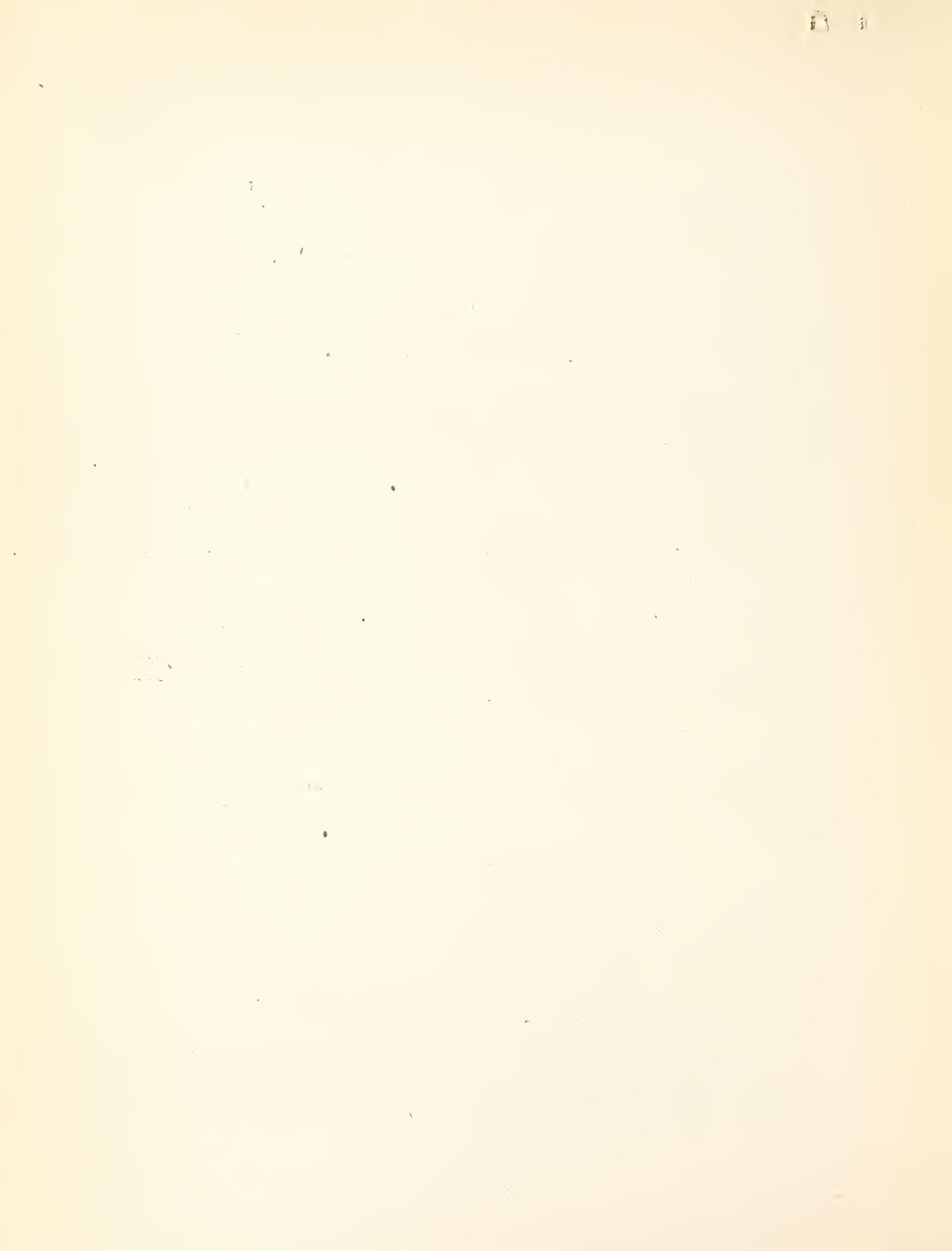
The season's field work in testing drainage pumping plants in the upper Mississippi Valley has been completed by Dan S. Helmick, S. D. E.

Run-Off Investigations.

The stream gagings and related field work being done in Tennessee by H. S. Andrews, S. D. E., have been discontinued for the season. Those in lower by Chas. E. Raifer, D. E., are being continued.

Legal, Financial, and Organization.

Further field investigations, by personal conferences with persons intimately associated with the practical operation of drainage laws and of financing drainage districts, have been undertaken by H. S. Yohé, expert.



DIVISION OF IRRIGATION INVESTIGATIONS
Samuel Fortier, Chief.

Projects:

Administration

Mr. Fortier, Chief, spent the first half of the month on leave. He left for an inspection trip in the West on July 26, going first to Denver.

Utilization of Water.

Mr. Joseph F. Kunesh, A. I. E. who has been assisting Mr. Rockwell at Mercedes, Texas, left our work July 20, to accept a position with the U. S. Geol. Survey with headquarters at San Francisco, Mr. O. E. Van Berg has been employed by the State to assist Mr. Rockwell.

F. J. Veihmeyer, A. I. E., has completed the field work on duty of water in Imperial Valley, on which he has been engaged for several years, and has gone to Los Angeles to work with C. E. Tait, I. E. on the report of this work.

Flow of Water.

F. C. Scobey, I. E., and P. A. Ewing, A. I. E. spent the month of July in Alberta and British Columbia, making measurements of concrete pipes. They will work in the Pacific states during August.

Customs, Regulations and Laws.

Circular letters asking for information regarding irrigation districts have been sent from the Washington office to the county clerks throughout the arid region. This information is needed to complete the data for the report which is being prepared by Frank Adams, I. M. and Wells A. Hutchins, A. I. E.

Drainage of Irrigated Lands.

A. A. Hart, S. D. E., spent most of the month of July in Arizona and New Mexico inspecting the work done in the Tempe Drainage District, Arizona, and investigating drainage conditions at Pima, Arizona and Roswell, N. Mex.

